

*The Cockroaches of the Carboniferous Epoch.*

By M. CHARLES BRONGNIART.

In the neuration of the first pair of wings Mr. Scudder finds little difference between the recent and fossil cockroaches. The latter he divides into two families, the Blattinariæ and the Mylaeridæ, distinguished chiefly by the arrangement of the mediastinal nervure. In the Blattinariæ the branches of this nervure start at regular intervals from a common trunk, so that the mediastinal area is usually in the form of a band. In the Mylaeridæ the branches of the mediastinal nervure originate from a common point at the base of the wing and appear to be arranged in a radiate manner around this point.

Hitherto the Mylaeridæ have been regarded as peculiar to the United States, but the author states that they are as numerous as the Blattinariæ at Commeny, where more than six hundred impressions of them have been collected by M. Fayol.

As authors have generally had only wings at their disposal they have been unable to give any precise information as to the form of the body. M. Brongniart now confirms Mr. Scudder's division of the group into Blattinariæ and Mylaeridæ by characters drawn from the body. The Blattinariæ have a very rounded prothorax, narrower than the part of the body covered by the wings; the Mylaeridæ have a thickset body with a wider prothorax, which, instead of being rounded, is nearly in the form of a triangle with the base in front.

But these two families have a common character which distinguishes them from the recent Blattariæ. The last dorsal arch of the abdomen in the fossils is widened, rounded, and divided into three parts by two longitudinal grooves. In the males the last ventral arch presents nothing extraordinary—it is truncated; but the females, instead of presenting, like the existing species, a keel-like last ventral arch cleft longitudinally in the median line to facilitate the deposition of the ootheca, have this arch terminated by a sort of slender borer, as long as the abdomen, widened a little and keel-shaped at the base, but straight towards the extremity. This apparatus resembles the ovipositor of *Eurycantha* among the Phasmidæ rather than that of the Locustidæ.

The presence of this borer leads to the supposition that the Carboniferous Cockroaches, instead of leaving their eggs on the ground enclosed in an ovigerous capsule, probably deposited them singly, like the existing Phasmidæ, perhaps introducing them, by means of the borer, into the trunks of trees.—*Comptes Rendus*, February 4, 1889, p. 252.